

$$f(\sqrt[n]{n-1}) \rightarrow f(n)$$

$$f(\sqrt[n]{n-1})$$

(الف)

$$[-1, -1] \xrightarrow{(1)} [-11, -2]$$

$$[-1, 1] \xrightarrow{(1)} [-2, 4]$$

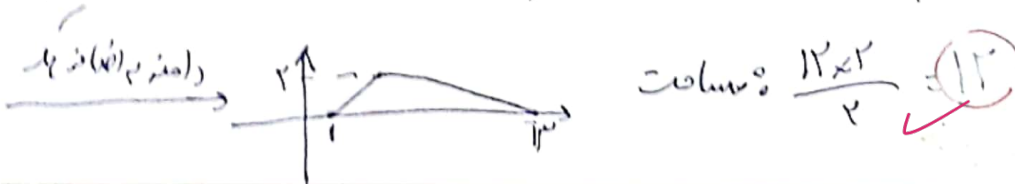
$$[-11, -2] \xrightarrow{(1)} [-14, -8] \quad \checkmark$$

$$[-1, 4] \xrightarrow{(1)} \left[-\frac{2}{3}, \frac{4}{3}\right]$$

$$n + \sqrt{n-1} \xrightarrow{y=n-1} \frac{1}{2}n - 1 + \sqrt{n-1} \xrightarrow{y=n-1} n = y - 1 + \sqrt{y-1}$$

$$\sqrt{y-1} = t \rightarrow n = (t^2 + 1) - 1 + t \Rightarrow (2t) \cdot t^2 + t + 1 - n = 0 \xrightarrow{\text{حل بابت } t} \text{برشود } t=0 \Rightarrow$$

$$\left. \begin{aligned} t &= \frac{-1 \pm \sqrt{1-n-1}}{2} \\ y &= t^2 + 1 \end{aligned} \right\} \Rightarrow y = \left(\frac{\sqrt{1-n-1} - 1}{2} \right)^2 + 1$$



$$n \rightarrow \frac{n-a}{2} \xrightarrow{y=n-a} y = \frac{n-a}{2} \xrightarrow{y=n-a} y = \frac{n-a}{2}$$

$$\frac{n-a}{2} = 2 \rightarrow n = a + 4$$

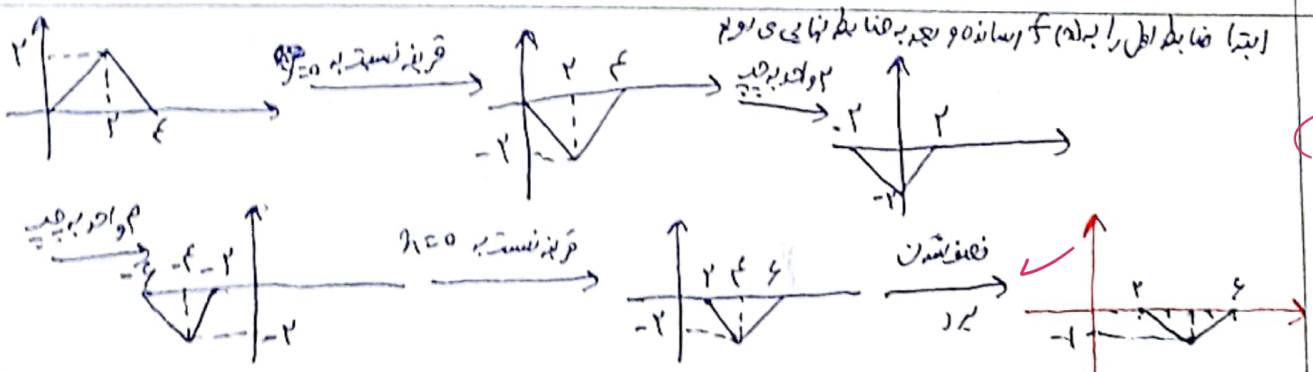
$$y = \frac{n-a}{2} \xrightarrow{y=n-a} y = \frac{n-a}{2} \xrightarrow{y=n-a} y = \frac{n-a}{2}$$

$$f(a) - 1 = a - 4$$

$$a = 2$$

$$1 + 2a - 1 = a - 4 \Rightarrow a = -4$$

دستگاه



رابطه‌های: $f(2n-1) = \begin{cases} -1 \rightarrow 0 \\ 2 \rightarrow 1 \\ 0 \rightarrow 2 \end{cases}$ از زیر ادکال به بالا

با اثر دادن: $-1 \rightarrow 0 \rightarrow 1 \rightarrow 2 \rightarrow 1 \rightarrow 0 \rightarrow -1$

$D: [-2, 0] \cup [1, 2]$

$g(n) = |2(n+k) - 3| + 1 - 3$

$g(n) = f(n), n=0 \rightarrow |2(0+k) - 3| - 2 = |-3| - 2 = 1$

$|2k - 3| - 2 = 1 \rightarrow |2k - 3| = 6$

$2k - 3 = 6 \Rightarrow k = 4.5$

$2k - 3 = -6 \Rightarrow k = -1.5$

$\frac{2n-1}{n+1} \xrightarrow{y \rightarrow x} -\left(\frac{2n-1}{n+1}\right) \xrightarrow{n \rightarrow \frac{1}{3}n} -\left(\frac{\frac{2}{3}n-1}{\frac{1}{3}n+1}\right)$

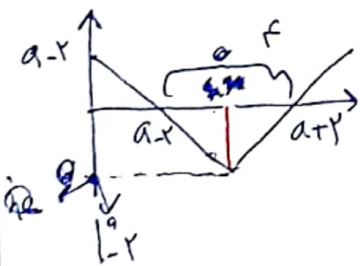
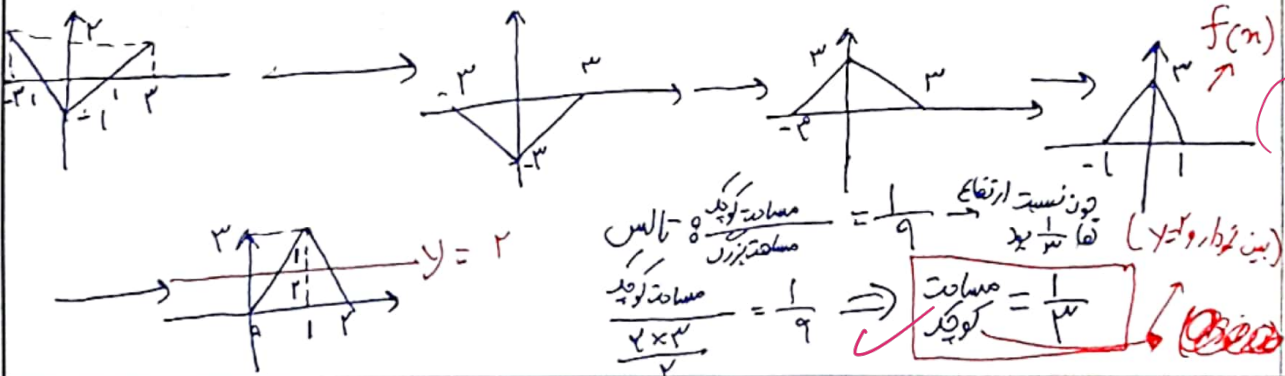
عبارت را با K تعویض کنیم
سیس دومعادله را برای n قرار می‌دهیم

$1 - \frac{\frac{2}{3}n-1}{\frac{1}{3}n+1} = \frac{2n-1}{n+1}$

$\frac{2}{3}n - 1 = \frac{2n-1}{3} \Rightarrow 2n - 3 = 2n - 1$

$K = 4$

$n - \frac{2}{3}n + \frac{2}{3}n + 1 - \frac{2}{3}n + \frac{2}{3}n + 1 = \frac{2}{3}n + 1 - \frac{2}{3}n - 1$



$f + \frac{(a-1)^2}{2} = f(1/2)$

$\frac{(a-1)^2}{2} = \frac{1}{2}$

$(a-1)^2 = 1 \Rightarrow a = 2$

$a = -1$

$f(1/2) = \left| \frac{1}{3} - 3 \right| - 2$

$= \left| \frac{1}{3} - 3 \right| - 2$